

## **Cephalothin\***

### **Class: $\beta$ -lactam**

#### Overview

Cephalothin is a relatively short acting first generation cephalosporin that is administered injectably. Although cephalothin is not approved for use in any animal species in the United States, the drug is used clinically in veterinary medicine. Cephalothin can cause nephrotoxicity.

#### Resistance

Cephalothin is relatively susceptible to  $\beta$ -lactamases. *Enterobacter*, *Klebsiella* and *Citrobacter* species have acquired resistance by chromosomal constitutively produced  $\beta$ -lactamases that are not inhibited by clavulanic acid. *Bacteroides* species develop resistance to  $\beta$ -lactams both by plasmids and chromasomally; however *Bacteroides* resistance remains susceptible to clavulanic acid. *P aeruginosa* is resistant to first and second generation cephalosporins because of problems with cell permeability/uptake, porin channels and drug efflux. *Stenotrophomonas maltophila* and *Aeromonas* species can be resistant through effects on porin channels and drug efflux, while *S aureus* can also be resistant due to drug efflux.

#### Effectiveness

Cephalothin is most effective against Gram-positive cocci and is also effective against several Gram-negative organisms. First generation cephalosporins are used primarily to treat skin and soft tissue infections caused by *Staphylococcus* and *Streptococcus* species. Cephalothin is ineffective against enterococci and evidence of in vitro sensitivity should be discounted.

**\*References available by request. Call the Infectious Disease Epidemiology Section, Office of Public Health, Louisiana Department of Health and Hospitals (504-219-4563)**